

Oak Street  
UNCLASSIFIED

University of  
Southern California

# BULLETIN

Volume V

NOVEMBER, 1910

Number 5



Front Entrance to Station

THE VENICE

*Marine Biological Station*

VENICE, CALIFORNIA



University of  
Southern California  
*Bulletin*

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The Venice  
Marine Biological Station  
Venice, California

Published Bi-Monthly by the University  
Entered as Second Class Matter under Act of Congress, July 16, 1894  
Los Angeles, California

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*Los Angeles, Cal.*

# The Marine Biological Station



A MARINE STATION may now be considered a necessary part of the equipment of the biological department of the modern university. During a series of years the University of Southern California has had under consideration the establishing of such a station. In recent years the extensive dredging operations at the beaches near Los Angeles have completely changed the biological aspects of numerous places once favorable for the study of marine life.

Within a radius which may be traversed by a forty-five minute



**Entrance to Aquarium from Museum**

trolley trip from Los Angeles a series of sixteen beaches may be reached. Collectively, they afford a very wide range of conditions affording a congenial habitat for almost every known group of animal and plant life. In addition to the varied natural conditions of the extensive coast line within easy reach of Los Angeles the numerous wharves in time become inhabited by a rich fauna and flora.

Each of the beaches has its special advantages as well as some features which are not so favorable. The location selected—that of Venice, California—is on the beach nearest the university and most



readily accessible, being only about thirty minutes distant by electric railway. The Los Angeles Pacific Electric Railroad is making extensive improvements in its equipment. When this work is completed, the service will be unsurpassed. The adjacent beaches are readily reached also by means of the numerous launches which make trips to these points at frequent intervals. It will thus be seen that



**General Laboratory**

Venice lies within easy access of the very diversified collecting grounds of Southern California.

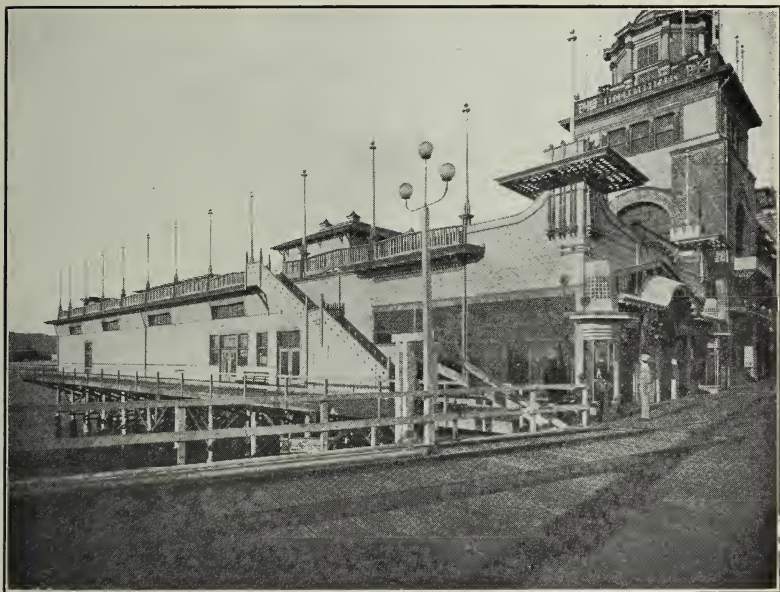
Another consideration of large importance to the station was the generosity and interest in education shown by the Abbot Kinney Co. of Venice. Realizing the wealth of animal and plant life the Pacific ocean places at our very door, this company had constructed, under direction of Dr. Chas. S. Bentley, an extensive aquarium. In this was exhibited a rich collection of living animals and plants of Southern California. A museum room and laboratories were also constructed. These were generously placed at the disposal of the University by the Abbot Kinney Co. for use in its educational work in the study of marine biology. In addition, the maintenance of this splendid collection was provided for. Thus the university is enabled from the beginning to give its undivided energy to the work of scientific study of the marine life of this region of Southern California.

For the present the work of the station will consist of (1) an

exhibition of the marine fauna and flora of this region open to the public and available for study by the lower division classes (freshman and sophomore) of the University; (2) facilities for students of the upper division classes to carry on studies suited to their advancement; (3) investigation pursued by graduate students, members of the staff or biologists from other institutions who may desire to carry on research at the station.

A prominent feature of the work in its beginnings will be the collection of a large representative series of animals and plants from a wide range of localities and accurate data concerning the habitat of each form. This preliminary biological survey is intended to serve a threefold purpose, viz.: (a) To provide living material for study in the aquarium and for class use; (b) to make some contributions of material for the use of investigators in special departments of research; (c) to stimulate an interest in the study of marine animal and plant life.

With this pioneer survey work done in an accurate manner, the



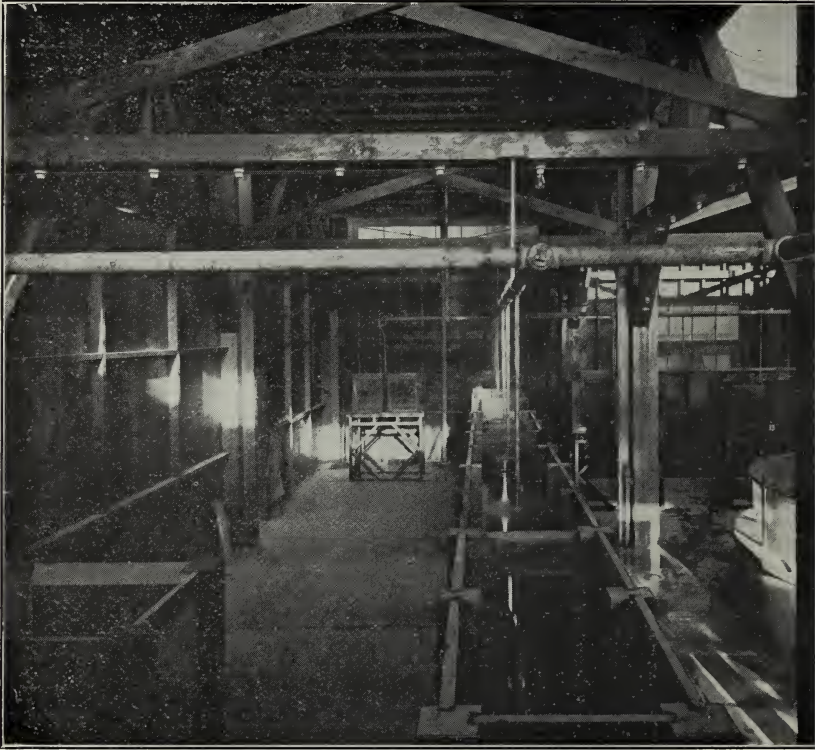
**Station Building and Venice Auditorium**

fundamental problems of animal and plant life may be considered with a degree of success entirely impossible without it. In certain localities and in some groups of animals extensive work has been done, but the wealth of life in Southern California, which is available for study throughout the year leaves much on every hand yet to be accomplished.

## Location



Venice, Cal., is situated eleven miles almost due west of Los Angeles. It is reached by the Los Angeles Pacific electric road. The car may be taken at the station at Fourth and Hill streets or at any of the cross streets passed by the cars. A twenty-minute service is



Interior of

regularly maintained with additional trains on special occasions.

The station is located on the wharf near the breakwater. The collecting grounds afforded by the extensive canal system, the long sandy beach and breakwater provide conditions suited to a diversified fauna and flora.



## Equipment

The equipment consists of a one-story building, in which is located laboratories, an aquarium of forty glass tanks with running sea water, and a museum room. An oval concrete pool twenty-six by twelve feet and ten feet deep is located beneath the large skylight and



aquarium

serves for large animals. At present it is occupied by a sea lion.

The laboratories face the north, are well lighted and provided with both sea water and fresh water. The workers in these laboratories have free access to the complete equipment of the departments of Zoology and Botany of the University. It includes microscopes, microtomes and other apparatus as well as the necessary reagents for carrying on the study of marine animal and plant biology.

## Accommodation and Expenses



Accommodations may be obtained at reasonable rates at Venice, either at the hotels or at Villa City. The cottages at Villa City are very comfortably furnished with everything needed for a pleasant outing. Information concerning accommodations may be obtained at the office of the Abbot Kinney Company on Windward avenue.

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## Tuition and Laboratory Fees



1. Students regularly enrolled for work in biology in the University have no extra fees for work at the station.
  2. Investigators from other institutions may have the privileges of the station without expense.
  3. Special students of marine biology will be able ordinarily to make collections of material for their fees.
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## Courses



1. **Biological Survey.** A study of the marine animals and plants of the region, including their classification, distribution and life habits.
2. **Experimental Biology.** Advanced students of zoology and botany may pursue the study of special problems of biology for which their training prepares them.
3. **Research Courses.** A limited number of private laboratories are available for free use of investigators who are prepared to carry on such work. Investigation may be carried on throughout the year. Application for these privileges should be made to the director of the station.
4. **Open Lectures.** At certain times the workers of the station and the public will be invited to special lectures on topics of general interest. These lectures will be given at Venice and will be illustrated by means of the balopticon.
5. For demonstration of life habits of animals and plants the elementary classes in zoology and botany of the University will use the extensive collection of the station.

The following lines of investigation by members of the staff and graduate students are in progress:

1. The development of the spine of the sting-ray (*Urolophus halleri*). Albert B. Ulrey, A. M.

2. Regeneration in certain types of Laminariaceae. Andrew C. Life, A. M.

3. The development of the enamel organ in Selachians. Helen Hawk, A. B.

4. The role of microorganisms in the wound produced by the sting-ray (*Urolophus halleri*). Chester H. Bowers, A. B.

5. The morphology and histology of the spines of Selachians. Chas. L. Parmenter, A. B.

6. An investigation of certain phases of regeneration in animals. Ray E. Carter, A. B.

7. The cutaneous secretions of the Batoidea. Chas. E. Nixon, A. B.

8. The morphology and reproduction of types of Phaeophyceae. Frank Fitch, A. B.

9. The work on the biological survey is carried on by the instructors and assistants of the station and by each of the graduate students of the department of biology of the university.

## Announcements



Specialists who desire material for the study of any group of animals or plants found in this region will be supplied as far as possible without cost, other than transportation, or with only the additional cost of collecting.

Authors of scientific papers, especially those on marine biology, will greatly aid the work of the station by sending their publications



**Villa City and Canal**

to the director who will acknowledge receipt and place the paper in the library of the station.

Marine biological stations at other places are requested to exchange announcements.

Residents of Southern California can contribute to the work of the biological survey by preserving for the use of the station rare animals and plants found.

The biological supply department of the University will furnish at the usual rates materials for use in classes in biology and botany or for museums.



# The University



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Lagoon and Canals





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